

## Research Article

# Negotiating Openness Across Science, ICTs, and Participatory Development: Lessons from the AfricaAdapt Network

**Blane Harvey**

b.harvey@ids.ac.uk  
Research Fellow  
Institute of Development  
Studies at the University of  
Sussex  
Falmer Road  
Brighton  
UK  
+44 (0)1273 915 831

## **Abstract**

*This article reflects critically on forms of openness and participation emerging from a collaborative network using information technologies for knowledge sharing on climate change and international development. It explores how multiple interpretations of these concepts coalesce around a particular initiative, shaping ways of working and understanding across different epistemic cultures (Knorr-Cetina, 1999) in the network. The resultant shared meanings and practices, it is argued, are a product of existent epistemic and participatory cultures, internal and external dynamics and economies of power, and emergent ways of working that are further shaped by engagement with particular information technologies and protocols. The process through which these shared meanings are constructed, however, is rarely transparent or openly reflected on, but rather, it emerges through the normalization of particular practices that “organize” our social relations. This limits our understanding of how a given “architecture of participation” has been constructed, or how it has situated those working in it. I consider the influence that these processes of meaning-making have had on the present shape of the network and reflect on what this means for such forms of collaboration more generally.*

## **1.0 Introduction**

The advent of new information and communication technologies, particularly of online, “Web 2.0” technologies that allow for a plurality of information sources and contributors from multiple devices, has stimulated the imagination of practitioners from a wide range of fields, including international development and the sciences. Through these new platforms lies the potential for groups once understood simply as *end users* or *consumers* of information to become active participants and producers, assuming multiple roles as they view, respond to, amend, and share content within and among different communities of interest or practice. This has led to claims that Web 2.0 represents a new “architecture of participation” that will democratize, and thereby challenge conventional paradigms of practice in ICT-mediated environments or relationships (Thompson, 2008, p. 825). Meanwhile, similar reflections on the evolving roles of “end users” have been unfolding in parallel in the areas of participatory development (Cornwall, 2006) and climate science (Berkes, Colding, & Folke, 2000), albeit to varying extents.

These transformations reflect broader challenges made to the notions of “official” or “valid” knowledge by critical, feminist, and postmodern theories (among others), as well as an increased awareness of the intimate

relationships between power, culture, and the construction of knowledge. They are also indicative of a broader critical rethinking of how particular epistemic communities and disciplines operate. With this context in mind, this article critically reflects on the prospect of a new architecture of participation emerging from a collaborative network using information technologies around climate change and international development. Using the case of a North–South network on knowledge sharing for climate change adaptation, it both explores how multiple interpretations of concepts such as “openness” and “participation” coalesce around a particular initiative, and explicates the processes that discursively construct the initiative’s ways of working and understanding. The resultant shared meanings and practices, I argue, are a product of existent epistemic and participatory cultures, internal and external dynamics and economies of power, and emergent ways of working that are shaped by engagement with particular technologies and protocols. The process through which these shared meanings are constructed, however, is rarely transparent or openly reflected on, but rather, it emerges through the normalization of particular practices that “organize” our social relations (Smith, 2001). This limits our understanding of how a given “architecture of participation” has been constructed, or of how it has situated those working in it. It has profound implications within and beyond the boundaries of a particular initiative, as “knowledge cultures have real political, economic and social effects” (Knorr-Cetina, 2007, p. 370)—effects that can lead to the inclusion of some at the expense of others, and that fundamentally shape what can be achieved. Acknowledging this complexity and openly engaging with the “invisible” processes of negotiation and normalization of meaning offers a space to both expose the ways that power and culture construct and constrain our understandings of practice, and to challenge the ways that development is enacted.

This article begins by introducing the notion of epistemic cultures (Knorr-Cetina, 1999, 2007) within the contexts of climate science and international development and links it to the production of particular forms of discourse that are supported by mediating technologies, such as ICTs. I then describe how

the intersection of these different communities in a collaborative initiative presents challenges to meaning-making through the case of AfricaAdapt, a North–South network for knowledge sharing on climate change adaptation in Africa. Through discussions with core partners hosting the network, I explore how ways of working were established and interpreted, and examine the influences that have contributed to particular discursive constructions of meaning and purpose within the network. Attention is given to the powerful influence of the development paradigm on how differently situated partners understand participation and openness, and on ways that the ICT-enabled environments within the network privilege certain forms of engagement at the expense of others. Based on these observations, I consider the influence that these processes of meaning-making have had on the present shape of the network and reflect on what this means for such forms of collaboration more generally.

## 2.0 Theoretical Background

### 2.1 Epistemic Cultures and the Discursive Construction of Meaning

Reflection on the processes and conditions through which knowledge is constructed, validated, and entered into currency has grown steadily since the 1970s. It has shed light on how power, gender, culture, and professional practice intervene in shaping what we “know,” and how the power to define what is known both reinforces the authority of certain social groups and disempowers others. The rise of globalization and new technologies in post-industrial societies has also led to a growing emphasis on information and knowledge as political and economic currency in transnational “information” or “knowledge societies.” Given these parallel trends in understanding around the situatedness of knowledge and its link to power, and the growth of knowledge as currency and commodity, researchers are keen to explore the makeup of what Knorr-Cetina calls *knowledge settings*, or “the whole sets of arrangements, processes and principles that serve knowledge and unfold with its articulation” (2007, pp. 361–362). These settings, she argues, are shaped by the particular epistemic cultures<sup>1</sup> that

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1. Knorr-Cetina defines an epistemic culture as the “interiorised processes of knowledge creation. . . . [T]hose sets of practices, arrangements and mechanisms bound together by necessity, affinity and historical coincidence which, in a given area of professional expertise, make up how we know what we know” (2007, p. 363).

determine the policies and practices that sustain or discourage particular outcomes to inquiry (ibid.). Knowledge settings have historically tended to be bound by time, place, and “lifeworld” (laboratories within the physical sciences, for example), but the advent of networked social interaction on a global scale—largely facilitated by technological developments in ICTs—has permitted the rise of more distributed settings within which these processes unfold. This evolution invokes a merging of lifeworlds through the negotiation of compatibilities between different administrative and political cultures (ibid.). In a context such as climate change and development, where the field of inquiry overlaps multiple epistemic, geographical, and societal divides, a clearer understanding of how the products of these knowledge settings circulate, are adopted or subjugated by other communities or cultures with competing knowledge claims, and merge themselves with other “truths,” is also required. It is within this contemporary state of the transnational, ICT-enabled *negotiation of*, and *trade in*, knowledge that the case discussed here finds itself.

As an approach to better understanding the link between the production of knowledge claims within particular epistemic communities and their entry into wider circulation I draw on the concept of *discourse*. A focus on the production of discourse is useful for understanding the ways communicative practices both constitute and express our social reality, and also reveal the role that power plays in this process (Foucault, 1980). “Power to control discourse,” Fairclough argues, “is seen as the power to sustain particular discursive practices with particular ideological investments in dominance over other alternative (including oppositional) practices” (1995, p. 2). The discursive shaping of words (and the range of concepts to which they refer) is ultimately constitutive of objects and social relations, as well as of the subject positions within these discourses from which individuals or collectives can speak. Thus, the framing of the meanings of terms like *participation* and *openness*<sup>2</sup> in development effectively shapes the politics of development practice—and by extension, the potential agency and identity of those who are

understood to be (or seek to be) operating within its community of practice. Cooke (2003), for example, argues that “participation,” as it is put into practice in World Bank/IMF development programming, bears more in common with popular governance under late colonial administration than with the types of empowerment with which the term is frequently associated.

A final issue that will be touched on in this article is the role of new communication technologies in relation to this process of production, validation, and circulation of knowledge. Here, ICTs are understood to serve as “mediating technologies” that play a key role in how people organize and coordinate their (and others’) actions. Silverstone describes the process of mediation as:

a fundamentally dialectical notion which requires us to address the processes of communication as both institutionally and technologically driven and embedded. Mediation, as a result, requires us to understand how processes of communication change the social and cultural environments that support them as well as the relationships that participants, both individual and institutional, have to that environment and to each other. (2005, p. 189)

In this sense, the role of mediating technologies cannot be seen as passive or neutral, but rather, as simultaneous *products* and *producers* of the environments and contexts in which they are put to use. By understanding ICTs in this light, it is possible to draw useful comparisons and linkages between the impacts they produce and the impacts of other mediating forces in development, including managerial technologies (such as *the project* and *evaluation*) that “serve to organize and coordinate actions involving people, time, space and money in the interests of efficiency and accountability” (Kerr, 2008, p. 99). Research into the use of information systems and technologies in the context of development have yet to fully explore these issues of “power, politics, donor dependencies, institutional arrangements,” yet these are “precisely the type of issues where critical work can open up the ‘black box’ as an aid to deeper understanding, and a stim-

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2. Use of the term “openness” in this article draws on recent IDRC work that sees it as characterized by two concepts: egalitarianism and sharing. “Egalitarianism suggests an equal right to participate (access, use and collaborate). Sharing is embedded in the idea of enhanced access to things that were otherwise normally restricted” (Smith, Engler, Christian et al., 2008, p. 5).

ulus to appropriate action" (Walsham & Sahay, 2006).

## **2.2 Participation, Openness, and Knowledge in Climate Science**

Given that natural sciences have traditionally been more strongly bound to a model of inquiry that privileges distance, objectivity, and authority than the development community, there has been less emphasis on inclusion, community voice, or openness to other knowledge sets within climate science until quite recently. Recent controversies around the transparency of the IPCC's climate modeling and prediction processes highlight the current bias toward closed "expert" dialogue in the establishment of new conclusions and knowledge (Tol, Pielke, & Von Storch, 2010). However, there is now an increasing acknowledgment of the potential for drawing on traditional practices bound within what are often deemed "nonscientific" knowledge sets (variously termed "local," "traditional ecological," or "indigenous" knowledge) to inform climate prediction, measurement, and adaptation, as well as an increase in support for engaging with communities in the use of climate information (Roncoli et al., 2002). This trend has emerged from a growing recognition of the limits of climate science in reliably predicting climate change and variability at the scale of resolution needed for communities to make informed decisions (Dessai, Hulme, Lempert, & Pielke, 2009), and of the central role that local knowledge, culture, and practice play in effective responses to climate change (Ensor & Berger, 2009).

As such, climate change represents a complex site where natural sciences, social sciences, culture, and politics intersect across multiple levels of action, from global climate models and governance frameworks down to local climatic impacts that stand to dramatically alter people's relationships with their natural environments. This site is further mediated through multiple technologies, including complex information technologies used for data collection, downscaling, and forecasting, as well as through global and regional institutional regimes in both the areas of climate change and development. These have profoundly shaped the contemporary discourse and body of knowledge around climate change and its link to development, and have also influenced the forms and levels of participation that are available, as I explore below more concretely.

## **3.0 AfricaAdapt: Negotiating Meaning Through Networked Collaboration**

I now turn to the case of AfricaAdapt, a network that brings together partners from both the science and development communities, and that is based on a nongovernmental organization, an intergovernmental organization, a regional center for scientific research, and a development research institute. This provides a clear example of the types of intersections between differently situated epistemic communities, drawing on different forms of technological mediation, which exist within a network whose overarching objective of "promoting a culture of knowledge sharing" is closely aligned with promoting openness as it is defined above.

### **3.1 Methodology**

This analysis draws primarily on semi-structured interviews conducted both face-to-face and virtually with five respondents from the network's implementing partners sitting at different levels of the network's management hierarchy, and with two respondents closely linked to the network's core partners. These included three of the network's Knowledge Sharing Officers (KSOs), who are charged with implementation of network activities and based in the partner African organizations; the then-program manager, based at the Institute of Development Studies; a member of the network management group based in an African partner organization; a UK-based knowledge-sharing advisor who was instrumental in the early development of the network's strategy and later provided mentorship to KSOs; and a representative from the donor institution familiar with the network's activities. Where possible, I have sought to use respondents' own words in describing their impressions of how these processes work, often placing their responses alongside one another to illustrate how people's situatedness has influenced their construction of meaning. These interviews were analyzed to draw out commonly recurring themes in the respondents' description of how meanings and ways of working were established within the partnership—themes that are explored below.

### **3.2 Background**

AfricaAdapt is a knowledge-sharing network on climate change adaptation in Africa established in 2008 and hosted by four partner organizations:

Environment and Development in the Third World (ENDA-TM), based in Dakar, Senegal; the Forum for Agricultural Research in Africa (FARA) in Accra, Ghana; IGAD Climate Prediction and Applications Centre (ICPAC) in Nairobi, Kenya; and the Institute of Development Studies (IDS) in Brighton, UK. The network describes its aim as “facilitating the flow of climate change adaptation knowledge for sustainable livelihoods between researchers, policy makers, civil society organisations and communities who are vulnerable to climate variability and change across the continent” (AfricaAdapt, n.d.). It has since grown to a membership of nearly 900, comprised primarily of professionals and students from the African climate and development community. AfricaAdapt was funded through the UK Department for International Development (DfID) and Canada’s International Development Research Centre (IDRC) under a broader program on Climate Change Adaptation in Africa (CCAA), which was designed to promote African participatory action research by African researchers. AfricaAdapt was therefore conceived to work within a similar ethos, offering a space for its members to profile the work they are doing, access information and findings from African research in a range of formats and languages, and establish new connections (both virtually and face-to-face) with others who are working on adaptation in Africa. The use of ICTs therefore plays an important role in facilitating and mediating relations between the four host partner institutions, as well as between the hosts and the broader AfricaAdapt membership. Among partners, key technologies that are used include Web 2.0 tools such as Skype, wikis, and Delicious, as well as more conventional tools such as e-mail. With its members, however, the network employs a different range of tools including Twitter, YouTube, and its own online platform that allows for the creation of user and project profiles in a style similar to that of Facebook and other networking sites.

Early thinking around the establishment of a knowledge-sharing network (before the selection of other partner institutions) was largely shaped by discussions between IDRC and IDS, including the establishment of what its understanding of what a culture of knowledge sharing actually involved. This was largely guided by one of the network’s knowledge-sharing advisors, then based at IDS, who played an instrumental role in first developing its implementation strategy, and then sharing this with

the selected partner institutes. It was on the basis of IDS’ vision of knowledge sharing and the discussions held at the inception of the network that partners developed a professional profile of the future network drivers, its cohort of Knowledge Sharing Officers, to be based in each partner institution. Each partner institution then took these initial recommendations and tailored them to their particular contexts, and proceeded to hire their KSO. The wide-ranging profiles of the KSOs recruited is indicative of the process of internal interpretation and negotiation between the vision of knowledge sharing conveyed by IDS at the inceptive meeting and the established institutional culture within the partner organizations. Within the agricultural intergovernmental organization, a KSO with a background in library information systems and ICTs for Development was selected. Within the environmental NGO, a KSO with a background in marketing was chosen, while at IDS, it was a KSO with a background in education and development. Meanwhile, within the science-based climate research institute, it was decided that the KSO must be a climate scientist, and as a result, a meteorologist with a background in physics was selected.

The interplay between the promotion of a particular vision of a culture of knowledge sharing at the inception of the network, and the way this vision has been interpreted and ultimately translated into the actual recruitment of KSOs reveals the multiple institutional and epistemic influences that shaped how knowledge sharing has come to be understood and enacted within the network. This process unfolded in stages that were *visible* (through presentation of a concept at a meeting of partners), *partially visible* (through internal negotiations within partner institutes), and *largely invisible* (through the initial development of a vision of knowledge sharing to be presented for review and approval), and that involved similarly varying scales of participation. These processes can unfold with multiple levels and scales of participation and openness being enacted simultaneously, and can greatly influence how particular concepts are collectively understood, embodied, and enacted, particularly within decentralized collaborative networks.

### **3.3 Construction, Validation, and Contestation of Meaning in the Network**

To illustrate the process through which meaning has been constructed within the network, it is useful to

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begin with an examination of some of the core concepts underlying its principles and objectives, and to reflect on how differently situated partners understood these meanings and the process through which they were shaped. Three concepts that were noted by partners to be particularly central *and* challenging were the following: a *culture of knowledge sharing* (as discussed above), *researchers* (as one of the key targeted groups of the initiative), and *quality* (a particularly nebulous concept, but a much-debated one for a network aiming to attract, translate, and disseminate climate-related research). As stated at the outset of this article, the shaping of discourse is understood to be constitutive of objects, social relations, and the subject positions within these discourses from which individuals or collectives can speak. Thus, people's reflections on this process can be useful in revealing how power is negotiated among particular actors, institutions, or communities, and how this ultimately impacts who is included, and who is not. The two examples below aim to illustrate how these negotiations unfolded within the network.

### ***"Our researchers are not lab coat researchers."***

As stated earlier, researchers form a core constituency and target audience for participation in the AfricaAdapt network. In the development of the network's strategy, it was generally agreed that researchers should be the first target as part of a phased marketing of the network to its potential stakeholders. However, given the multidimensional nature of research into climate change in Africa, the range of possible researchers that might be targeted is wide and varied. Combined with challenges of translating the notion of "research" across cultural and linguistic divides among network members, this rather vague identification of a target audience created some initial confusion, according to a number of respondents. As one recounted:

*KSO 1: One of my colleagues, a knowledge-sharing officer, she's from a francophone background, but she was always using the word researchers, researchers, and I think she reached the point where she was confused. So she was like "ok people, please clarify what do you mean by researchers? For me when I hear researchers I think of someone in a lab coat, but our researchers are not lab coat researchers."*

In time, however, the understanding of what is implied by researchers within the shared discourse

of network members narrowed considerably, and it fell very much in line with the forms of participatory action research (PAR) that were being funded through the IDRC's CCAA program. This evolution was understandable on a number of levels, given that these forms of research matched well with the overall objectives of the network, and that there were clear advantages in terms of access to contacts and information for outreach, and of course, the potential advantage of being seen to be promoting donor-funded research. However, between members of the network, the process by and justifications for how "researchers" came to mean this particular set of actors are differently understood, though the influence of the funding partners was noted by all. One KSO, for example, felt that the network had gradually lost control of its focus due to increasing attention to donor priorities by group members, while for another KSO this arose from a search for focus from *within* the network, alongside the influence of donors:

*KSO 2: I think that we said to ourselves, "let's start with researchers," but "researchers" is so broad . . . To reassure ourselves we fell back on CCAA projects because it was easier. We really focused on that and it helped us a lot. I think it was heavily influenced by the project funders. Even unconsciously we said to ourselves "Ah the CCAA projects!" because they funded us, but is that the best process? [trans.]*

In discussing this issue with the program manager, however, a very different perspective is offered; one that sees the network evolving (through some degree of contestation) *toward* greater inclusiveness, not away from it:

*PM: I think a very important change that happened and something that I fought for, and actually something that the [donor's] field program manager in Africa was supportive of, and that was that AfricaAdapt didn't have to serve just the needs of the CCAA program, that it could actually be seen as covering the whole of the African adaptation domain, it didn't have to just be a client of the program. . . . I think for us it's allowed us to provide some degree of delinking from CCAA, but externally viewed people still think of it as some kind of child of IDRC.*

The range of perceptions on how the current understanding of targeted researchers evolved is indicative of how significant the "hidden transcript"

of partially or wholly invisible meaning-making can be in shaping differently situated people's understandings of how things work. They also point to the power of particular voices—both heard directly and inferred—in prompting an alignment of understandings (for example, of “researchers”) with the messages they are understood to convey. Thus, while AfricaAdapt is theoretically open to anyone, and indeed those who discover it either online or at an event can be from a range of backgrounds, the extension of invitations to join this “open” space has been conducted in line with particular priorities, whether strategically or unconsciously.

Openness and participation are fluid concepts, and spaces for participation are contingent on a diversity of factors, including, in this case, the types of tools or resources made available for users to participate (climate data sets vs. Facebook-style profile pages, for example), the forms of invitation they receive to participate, the incentives for or pressures to accommodate particular actors over others (as alluded to above), and the types of values that a particular space seems to reflect and reinforce (as discussed below) (Cornwall, 2002). This is recognized by network partners, particularly in discussing the limited engagement of climate scientists as a part of the targeted researcher audience. The program manager provided some initial reflections on this point, suggesting that both internal and external factors have had an influence on climate scientists' limited participation in the network:

*PM: Science has not played a particularly strong role, but again I think that's partly because there are other networks, and other spaces that inhabit the science interactions, and that we've tended to say we're not there to duplicate. . . . And I suppose we haven't really provided the kind of spaces and sharing spaces to really encourage a strong science dimension to the network.*

A KSO, however, focuses on the lost opportunity they associate with having failed to create the necessary incentives to bring climate scientists on board, particularly in light of the fact that one AfricaAdapt partner, ICPAC, is science-focused:

*KSO 1: ICPAC has links to climate scientists and people like that but I don't see any of the scientists on board. So now that I think about it, yes, maybe it would have sort of, not diminished their role, but not made the most out of them. Because we are supposed to target researchers, we*

*are only doing the [PAR] researchers, we are leaving out the climate scientists.*

These views reinforce the theory that the types of spaces made available for participation, as well as the spaces available elsewhere, have played a determining role on the types of participants that have ultimately joined the network. In effect, the decision to prioritize investing the network's finite human and financial resources into engagement with the action research community may have consequently constrained the ability of other types of researchers to engage, including climate scientists. While such decisions might be seen as a failure to be open and inclusive to all (as suggested by the KSO), on a more pragmatic level, they also reflect an understanding of the challenge (or futility) of being “everything to everyone,” and instead developing a particular niche alongside other initiatives, as the program manager mentions. This illustrates a key challenge of promoting openness—namely, that the spaces for achieving it do not look the same for everyone, and therefore, they accommodate some more easily than others. It also highlights the degree to which the prioritization of a particular group of researchers, through processes that are influenced and interpreted differently by differently situated partners, have had a fundamental and lasting impact on the shape of the network. It also leads us to a related concept that may have influenced, and been influenced by, the membership to which the network ultimately appealed.

### **Assessing and Valuing “Quality”**

It isn't surprising that, within a network dedicated to sharing knowledge on a subject as contentious and complex as climate change, questions of quality and validity of information are considered of utmost importance. Knowledge on climate change sits across a range of epistemic, disciplinary, and institutional communities, drawing on a range of sources of knowledge production that meet with varying levels of acceptance. In many ways, it is at this frontier between the supposed objectivity and verifiability of scientific observation, and the “softer” forms of local observation, traditional or indigenous knowledge, and multiple ways of representing knowledge that AfricaAdapt finds itself. Given that processes of gathering, appraising, and validating knowledge are central to the structure and practice of epistemic communities (Knorr-Cetina, 1999), it was clear from the network's inception that decisions would need to be made on the “editorial”

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approach to quality control that would be pursued. These decisions would shape the opportunities for contribution among some audiences, while potentially creating a more or less familiar space for contribution for others, depending on the conceptions of quality and editorial control that were adopted. The thinking that framed these discussions is recounted by the program manager:

*PM: Obviously from the very start we were critically aware of quality issues. But the fact that we wanted to be a reasonably open space, not heavily moderated, and one that appreciated different forms of knowledge, and IDRC pushed this too, they wanted a very strong community dimension to the website and to our action, and that we needed to make sure that we were engaging down to community level, indigenous knowledge and all that kind of thing. So kind of the editorial policy was always being really shaped from the start, to one that was reasonably open and freer than a lot of other editorial policies I've seen. Which obviously sat a little bit in tension with members of the managing group who said: "Well actually we need to be working on the basis of quality climate science, and quality science is the backbone to our work."*

Indeed, when asked about how AfricaAdapt should strive to sustain the quality of its knowledge resources, the KSO with a climate science background appealed for more stringent forms of expert moderation and control:

*KSO 3: The knowledge that is generated and the quality of that knowledge has to be maybe supervised or maintained through some mechanism, one could be the sort of review mechanism put in place with experts or our own exchanges or what have you. . . . And also maybe when we put content up we have to be selective, maybe looking for people who are good in a specific specialisation, known scientists or known professors.*

These differences point to wider discussions on sources of knowledge within climate change and development, as noted at the outset of this article. The potential impact of this stance on the contributions that would be sought and accepted within the network were noted by the manager and the KSO cited above, particularly in terms of how users accustomed to far more prescribed notions of quality, especially climate scientists, might react. The program manager wondered,

If a climate scientist within Africa who's writing, you know, what they think are high-quality papers on climate science, think well maybe you know 'I won't upload this to AfricaAdapt because there's no kind of validation process, so therefore you know, my work might be compromised.'

This suggests the possibility that taking an approach of seeking more inclusiveness may, in fact, *limit* the potential for participation from those working within epistemic cultures that privilege adherence to more standardized (or exclusive) measures of quality. It also represents a considerable challenge for initiatives seeking to promote sharing across disciplinary or epistemic boundaries, as archetypes of practice are rarely compared or discussed within this sharing, and yet are often poorly understood from one community to another.

Ultimately, the question of quality control has not yet led to serious conflict within the network's partnership, despite the fact that partners' own perceptions on this issue vary widely. We *do* see, however, a view of quality emerging in line with the particular stance on the broader debate over knowledge taken by both IDS and the donor organization. The implications of this stance are not insignificant, particularly within the political economy of knowledge production in the climate change adaptation community. The stance has also helped to shape the ways in which ICTs have been drawn on to enable users to contribute to knowledge sharing within the network, as I now explore.

### **3.4 Communication and Technologies in the Negotiation of Meaning**

The decentralized nature of the AfricaAdapt network partners and its targeted audiences has meant that ICTs have played a very central role in both its management and the delivery of its services to members. However, the fact that connectivity and use of online technologies remain limited on the continent where 80% of network members are located presents a significant challenge to this role. This issue has been a point of reflection, as partners have sought to balance the selection and use of technologies that allow users to express themselves in a variety of formats (photos, video, blogs, etc.) while acknowledging the limiting factors of connectivity, literacy, access to technology, and more. There is also a need to recognize the "inscribed logic" of the tools that have been selected and their appropri-

ateness of fit with particular knowledge settings. The use of wikis as a space for co-creation, for example, where there is never a “definitive” version of a text, and where one’s contributions are always subject to review and revisions by others, has met with unease among some members of the climate research community (IDS, 2009). Similarly, the absence of climate modelling tools and data sets within the range of tools (which are available on other knowledge platforms) reinforces a particular view of the forms and sources of information and knowledge that the network aims to put into greater circulation, as discussed above.

Beyond the selection and deployment of appropriate ICTs for network members, communication presents broader ongoing challenges to the core partners, who seek to ensure a spirit of openness and collaboration, while at the same time, negotiating different expectations within the bounds of each institution’s norms of practice. These issues offer insight into the challenges of openness when collaborating across divides, be they institutional, epistemic, cultural, linguistic, or technological. They also overlap with the challenges of meaning-making raised in the previous section—both reinforcing particular meanings and being shaped by the meanings that have been produced. Core management partners, for example, pointed to an internal struggle of balancing a need for greater openness between partners with the desire to create spaces that allow for safer risk taking, particularly among KSOs, a stance that was strongly advocated by the IDS knowledge-sharing advisor. He explains:

*I think at an early stage we felt this was the KSOs and the knowledge sharing advisors coming together, talking about where would be a space that the KSOs could themselves share, and build up their sense of peer support, and the decision to have a wiki space for the KSOs, which was a private space, seemed like a very good idea. . . . [A]nd there was actually a desire from the core group to know actively about what the KSOs were talking about in their meetings, and there was a bit of negotiation there about how much would be shared.*

These negotiations in promoting openness within the partnership while avoiding the forms of compulsory visibility, or “information panopticism” (Zuboff, 1988), point to an important link between openness and the technologies that support it. A closed online

space for KSOs outside of managerial oversight was dissonant with the institutional hierarchies and practices within some partners, as well as with some partners’ visions of open sharing, whereas the creation of “safe spaces” within the model of openness espoused by others was seen as essential.

### **Beyond ICTs: Mediating Technologies and the Regulation of Practice**

Beyond the mediation that ICTs provide, other technologies (using the term in its broader sense) have fundamentally shaped the forms of openness and participation that have emerged from within the network. Of particularly strong influence here is the concept of “the project” itself, along with its associated techniques and practices. This is particularly pertinent to the field of international development, where action is largely shaped around relationships that are framed by the project structure. As mentioned at the outset of this article, the partially visible process of developing the initial project proposal established the discourse through which understandings of the network’s aims and definitions were later formalized. Further, the development of partner work plans and logical frameworks has served to delineate the spaces where partners and particular individuals within partner organizations are expected to take a leading role, essentially delineating and rendering visible spaces and degrees of openness within the activities of the partnership. One KSO highlighted the potential of these technologies for making visible the activities in which partners are engaged, arguing that “we should work more on putting communications systems into place that are really crosscutting, and project management tools such as worksheets; very simple tools so that any project member can see what’s going on.” Another KSO highlighted the importance of these technologies in the governance of partners’ actions:

*KSO 3: So there is the governance structure of AfricaAdapt and on top of that we have the project documents which serve as the guidance to execute the project. So those are the things which lead us to decisions. For example, where decisions are made by the core group members for example, based on the project document and then actions are taken by say if a KSO has to do it or if each individual institution has to do it.*

Thus, the development and use of these forms of project documentation effectively serve to mediate

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and organize people's actions in line with prescribed norms, both within and among partner institutions (Kerr, 2008; Smith 2001), helping to clarify roles and responsibilities—but at the same time, potentially imposing boundaries on actors' agency. The statement above also points to the hierarchy of engagement perceived by the KSO (flowing from a project document [as developed and ratified by a limited set of actors] to a core management group, down to KSOs who execute particular decisions), a scale that is differently acknowledged and adhered to within each partner institution.

In AfricaAdapt, as in most other projects, mediating technologies, including ICTs and broader forms of managerial technology, serve to facilitate certain forms of interaction and communication, while precluding others. In the context of developing new insights on openness and participation, unpacking these dynamics can reveal the complexity of attributing the impacts of particular technologies while partners are enmeshed in multiple layers of mediation. For example, the use of new communication tools, such as the KSO wiki mentioned above, may create new spaces for co-construction of meaning, but these benefits may be offset or challenged by forms of institutional hierarchy and limits implied through other managerial technologies, such as the project's logical framework. The concluding section of this article draws out some of these observations and considers what they might mean for future research and action.

### 4.0 Discussion and Conclusions

AfricaAdapt has set itself an ambitious challenge of encouraging greater openness and collaboration in knowledge sharing on climate change adaptation across a multitude of divides, and in doing so, it has achieved some remarkable successes, all while revealing important lessons. This article has reflected on these by drawing directly on the viewpoints and experiences of those situated at different positions within the network's core partnership. In particular, it has considered the ways that the negotiation of meaning within partnerships influences the scope for a "new architecture of participation," and the ways that ICTs and other mediating technologies influence (and reflect) this negotiation. An overarching conclusion supported by this study is that, while these new technologies may, indeed, offer new ave-

nues for contribution and participation in certain contexts, they are subject to a number of other factors that may help to determine whether and in what form this new architecture will emerge. Further, given the varying interpretations of openness and participation, particularly in collaboration across epistemic communities (as we tend to find in climate change and development), consensus views on the suitability of a given architecture may be difficult to establish. Beyond these more general observations, the network's experience highlights the following key points of learning:

- *Conceptions of openness and participation are products of particular epistemic and institutional cultures, and they will "democratize" knowledge production differently.*

Recalling Knorr-Cetina's assertion that "knowledge cultures have real political, economic and social effects" (2007, p. 370), interpretations of what is implied by "collaborative" rather than "centralised" production of content (Smith, Engler, Christian et al., 2008), for example, are fundamentally shaped by the existing institutional and epistemic traditions onto which these concepts are overlaid. These can, in turn, have a determining influence on when and whether one person's opinion can override another's, as well as on whether opportunities for collaboration must be invited or claimed, etc. The influence of these existing knowledge cultures cannot be discounted, and must be better understood within the broader context of a political economy of knowledge generation, validation, and circulation in order to be engaged with effectively. Within networked collaborative environments such as AfricaAdapt, this task becomes even more complex, as these different conceptions of openness intersect, and therefore must be negotiated.

Further, in contexts where the promotion and circulation of knowledge from outside of dominant practice is a stated aim, the bias toward aligning spaces and technologies with subjugated knowledge and representations may necessarily entail a *limiting* of participation and openness to others, as was evidenced in the discussions on quality, for example. Thus, the promotion of openness within networks may involve difficult decisions about whose ways of knowing, working, etc., will be modeled at the expense of others—discussions that seldom occur openly. Consequently, it should be acknowledged

that the creation of spaces for participation (such as platforms and networks) cannot occur “outside” of the broader dynamics of power and authority of a given setting or epistemic community. This suggests a more complex relationship between openness and the democratization of knowledge than was assumed by network partners at the outset of the AfricaAdapt program, for example, and calls on knowledge intermediaries to reflect more closely on the roles they (and others) play in opening or limiting these spaces, and to whom.

- *Formal and informal negotiation of meaning is central to the shared understanding that is ultimately produced in networked collaboration.*

Building on the previous point, collaboration across divides invariably entails a negotiation of meaning among asymmetrical and differently situated partners. These negotiations can take place in contexts that may be informal or “invisible,” formal and open, or formal and closed. Meaning often emerges from a combination of these contexts, leading to a lack of clarity on how particular understandings came into use. Actors are not equally placed to influence the outcomes of such negotiations, and understanding how people’s positioning (as donors, Northern partners, junior or senior staff, etc.) affects their access to and influence on these outcomes is central to understanding how meaning has been constructed within the partnership. Beyond this, the study has noted how, frequently, meanings that appear to be shared may be institutionalized or enacted in vastly different ways (as was the case with the hiring of KSOs), and thus may lead to very different outcomes.

- *ICTs and other mediating technologies play an influential role, both in the negotiation of meaning, and in determining how we move from meaning to action.*

Finally, it is important to recognize the role that mediating technologies play in facilitating or precluding certain forms of communication and participation. There is a need to recognize the challenge of balancing an intensification of technologies and visibility with the assurance of spaces in which people can struggle to create meaning for themselves before engaging openly. It is also important to bear in mind that particular mediating technologies can either reinforce or clash with the norms of participation established within particular epistemic and cul-

tural norms, and to understand the impacts that this will ultimately have on inclusion.

This article has also situated ICTs as one group out of a variety of potential mediating technologies (such as the notion of the project itself in the context of development) that can mutually reinforce or contradict one another. Thus, I argue, we cannot look to ICTs as guarantors or models of new architectures of development without also looking at the whole range of practices, understandings, and mediations that unfold within this complex arena (Avgerou, Ciborra, & Land, 2004). Doing so, however, offers us new opportunities to not only strive for better openness through the use of new communication technologies, but to challenge the very ways that development partnerships are enacted.

### **Moving Forward**

At the core of addressing the concerns raised here is acknowledging the inevitability (and normalcy) of these processes of meaning negotiation within collective partnerships from their outset, and considering the forms of visibility and openness that these types of negotiation involve. This might mean spending significantly more time at the earliest stages of collaboration unpacking assumptions that may (from one individual’s or institution’s perspective) appear obvious and uncontroversial, but which could seem highly contentious to others. It may demand identifying and mapping key influences on discursive production and meaning-making, and reflecting on how differently situated partners are linked to these influences. This point was echoed by the AfricaAdapt program manager in his reflections on how he might have approached the initial phases of network development differently:

*PM: I would, we’ve talked about this a number of times, would have worked harder at the start in engaging the whole institution in a discussion about what knowledge sharing means for them, from the start, rather than thinking that we can build the capacity of a few individuals, and then begin to think that that’s going to change the institutional culture.*

This suggests, I would argue, the need for placing reflexivity and collective learning at the center of efforts to achieve openness, and for appreciating the risks people take in confronting and revising their own practices and understandings, particularly across epistemic divides. This learning could also

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draw in a review of the evolving appropriateness of the technologies being deployed within an initiative to assess their appropriateness. This form of learning, seen as central to communities of practice (Wenger, 1998), is too often overlooked within networked development practice, or is addressed post hoc, rather than as a starting point. As such, openness is perhaps best understood as a collective process that is continuously under development and review, rather than as a fixed endpoint that can be constructed. ■

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